

Claims

1. A tool-holding device (22, 50, 58) for holding a tool (24) on a tool chuck (20), having a tool-locating region (32, 52, 66) for at least partly locating the tool (24), a connecting region (26, 54, 62) for arranging on the tool chuck (20), and a positioning opening (48), through which a positioning means (18) can be placed against the tool (24) arranged at least partly in the tool-locating region (32, 52, 66).

2. The tool-holding device (22, 50, 58) as claimed in claim 1, characterized in that the tool-locating region (32, 52, 66), when the tool chuck (20) is arranged in the connecting region (26, 54, 62), is intended for holding the tool (24) in alignment with a locating opening (28) of the tool chuck (20).

3. The tool-holding device (22, 50) as claimed in claim 1 or 2, characterized in that the connecting region (26, 54) has a shank for arranging in a locating opening (28) of the tool chuck (20).

4. The tool-holding device (50, 58) as claimed in one of the preceding claims, characterized in that a holding element (56, 68) provided for the elastic deformation is arranged in the connecting region (54, 62) and/or in the tool-locating region (52, 66).

5. The tool-holding device (50) as claimed in claim 4, characterized in that the holding element (56) comprises an O-ring.

6. The tool-holding device (58) as claimed in one of the preceding claims, characterized in that a movably mounted holding element (68) is arranged in the connecting region (62) and/or in the tool-locating region (66).

7. The tool-holding device (58) as claimed in claim 4 or 6, characterized in that the holding element (68) is a rolling-element cage.

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8. The tool-holding device (58) as claimed in one of the preceding claims, characterized in that the connecting region (62) has an inner wall (64) for arranging around an outer wall (60) of the tool chuck 10 (20).

9. The tool-holding device (50) as claimed in claim 8, characterized in that the inner wall (64) is tapered.

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10. A method of positioning a tool (24) in a tool chuck (20), in which a tool-holding device (22, 50, 58) is arranged on the tool chuck (20) and the tool (24) is held by the tool-holding device (22, 50, 58), and a 20 characteristic element (42) of the tool (24) is scanned for positioning a positioning means (18), a force being applied to the tool (24) by the positioning means (18) through a positioning opening (48) in the tool-holding device (22, 50, 58).

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11. The method as claimed in claim 10, characterized in that the force on the tool (24) is maintained during the measuring of the characteristic element (42).

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12. The method as claimed in claim 10 or 11, characterized in that the positioning means (18) is placed against the tool (24) before the measuring of the characteristic element (42), and the tool (24) is scanned when said positioning means (18) is placed 35 against it.

13. The method as claimed in claim 12, characterized in that the placing of the positioning means (18)

against the tool (24) causes the tool (24) to move, and the movement is used as a trigger for stopping the movement of the positioning means (18).

5 14. The method as claimed in one of claims 10 to 13, characterized in that the tool (24) is lifted in the tool-holding device (22, 50, 58) by the positioning means (18) before the measuring of the characteristic element (42) and remains lifted during the measuring.

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15 15. The method as claimed in one of claims 10 to 14, characterized in that an optical measuring system (6) is focussed on a predetermined point, the optical measuring system (6), if the tool (24) is absent or visible in the field of view (36, 36a) of the optical measuring system (6), is brought closer to or respectively moved away from the tool chuck (20) in the axial direction (40) of a tool-locating region (32, 52, 66), and, after the characteristic element (42) appears 20 in the field of view (36, 36a), its actual position (Z_{actual}) is determined and the force is then applied to the tool (24).

25 16. The method as claimed in claim 15, characterized in that, after the application of the force, the actual position (Z_{actual}) is measured again for determining the desired position of the positioning means (18).

30 17. The method as claimed in one of claims 10 to 16, characterized in that the tool (24) and the tool-holding device (22, 50, 58) are separated from one another after the measuring and the tool (24) is inserted into the tool chuck (20).